Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of
Modernizing the FCC Form 477 Data Program WC Docket No. 11-10

COMMENTS OF
THE USTELECOM ASSOCIATION

Its Attorneys: B. Lynn Follansbee
Jonathan Banks
601 New Jersey Avenue, NW
Suite 600
Washington, D.C. 20001
202-326-7300

October 10, 2017
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EXECUTIVE SUMMARY

In revising the Form 477 data collection, USTelecom urges the Commission to carefully balance the potential benefits of its proposals against the regulatory burdens they would create. Under this analysis, the Commission should not seek to collect broadband deployment data that is more granular than at the census block level, because such a change would be unduly burdensome to providers and would not provide the Commission with better data on broadband deployment. Most sub-census block data collections would require significant programming time and expense, and the massive amount of data generated would likely not be nearly as accurate as the data the Commission has today, and therefore would not be useful in furthering any of the Commission’s policy goals.

In their normal course of business, most USTelecom members do not store, within their systems nor in a database, the location of every customer in geocoded format, let alone data for every location where they could provide service. Furthermore, it is nearly impossible to capture this sort of dynamic data accurately in real time and would require such a systematic change to operating systems and procedures that it would increase costs and introduce delays every time equipment is upgraded. Programming costs would be large particularly for small rural carriers that can’t even afford to do geocoding currently, and would cause further challenges for price cap companies that are still in the midst of addressing geocoding exceptions with the reporting of CAF Phase II locations.

USTelecom members also oppose proposals that would require fixed broadband providers to provide deployment data as polygon maps or at any sub-census block level. Coverage maps have been shown to cause disputes among providers due to over- or understatements of broadband coverage. Sub-census block determinations would further
degrade accuracy of reporting on the FCC Form 477 because experience has shown that it is much better to work off a standard unit. Additionally, such a proposal would be overly burdensome to providers and would generate a volume of data so large that the Commission would likely have to create an entirely new platform to receive it.

USTelecom is in favor of eliminating the separate reporting of available contractual or guaranteed data throughput rates (aka committed information rate or CIR) for BDS (business/enterprise/government services) because in most instances, USTelecom members’ “best efforts” rates are the same for residential and business mass market deployment, in part because higher speeds involve special construction. Furthermore, for most USTelecom members, BDS are not considered mass market and as such are not currently required to be reported on the deployment section of the FCC Form 477 because they are not able to be provisioned in a customary timeframe.

USTelecom supports the Commission’s proposal to move from a semiannual collection of the FCC Form 477 to an annual collection. USTelecom members believe the utility data is not significantly hampered because even on a one-year cycle, the Commission will continue to have the data it needs to meet its statutory and policy making obligations and will provide staff with additional time to focus on the processing and release of reports and data.
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The USTelecom Association (USTelecom)\(^1\) is pleased to submit these comments on the Commission’s Notice of Proposed Rulemaking regarding modernizing the FCC Form 477 Data program. (\textit{477 NPRM}).\(^2\) In the \textit{477 NPRM}, the Commission makes several proposals aimed at determining what sorts of data should be collected in order to make the collection the most useful to the Commission and the public.\(^3\) While the Commission highlights the need to collect the best data it can to accurately reflect the availability of broadband services, it also acknowledges that it has sought to minimize the burden on filers by collecting only easily-quantifiable and readily available statistics.\(^4\) The \textit{477 NPRM} asks many questions about the possibility of increasing the amount and granularity of the data submitted on the FCC Form 477.\(^5\) USTelecom members agree that the best available data should be collected, but that in several instances, the additional data collection would significantly increase the burden on filers without providing meaningful

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\(^1\) USTelecom is the nation’s leading trade association representing service providers and suppliers for the broadband innovation industry. Its diverse member base ranges from large publicly traded communications corporations to small companies and cooperatives – all providing advanced communications and broadband services to hundreds of millions of customers around the world.


\(^3\) \textit{477 NPRM} at 6329-30, para 1.

\(^4\) \textit{Id.} at 6330-31, para 5.

\(^5\) See e.g., \textit{Id.} at 6340-44, paras 36-44.
information to the Commission. As such, USTelecom urges the Commission to carefully balance the potential benefits of its proposals against the regulatory burdens it will create if it adopts its proposals. The Commission should assess the need for its proposed new rules in light of the programming and technological capabilities of providers of multiple sizes and what data would be truly useful to inform the Commission and the public, clearly defining the purpose and construct of the data request.

I. It is Unnecessary And Burdensome To Require More Granular Data.

In the 477 NPRM the Commission states that it has asked for data that is more granular than at the census block level in recent proceedings because such data is useful in understanding issues surrounding fixed broadband deployment, and the Commission believes that making detailed residential deployment data more generally available could be useful. USTelecom members disagree. Overall, requiring the collection and submission of more granular data would be unduly burdensome to providers and is simply unnecessary. Most sub-census block data collections would require significant programming time and expense. Furthermore, the massive amount of data generated would likely not be nearly as accurate as the data the Commission has today, and therefore would not be useful in furthering any of the Commission’s policy goals.

In this proceeding, the Commission asks for more detailed data in a number of different ways. First, the Commission seeks comments on whether all fixed broadband providers should be required to identify, by technology, the following three categories of service areas: (1) areas where a carrier has existing customers served by a particular last-mile technology, and is capable of adding to its total number of customers within a standard interval upon request; (2) areas where existing customers are being served, but the carrier is not capable of accommodating new customers; and (3) areas where a carrier does not have existing customers, but new customers

6 Id. at 6341, para 37, citing, 47 C.F.R. § 54.316.
could be added within a standard interval upon request.\textsuperscript{7} The Commission asks how providers would be able to identify the relevant geographic units and if such data would provide more accurate and useful information to the Commission, other policymakers, and the public than is already available.\textsuperscript{8}

In their normal course of business, most USTelecom members do not store, within their systems or in a database, the physical location of every customer in geocoded format, let alone data for every location where they could provide service. Instead providers typically store the physical location for each existing customer location and the associated billing address. Addresses are generated at the time of order or at the time of development, such as when a subdivision is created. However, physical locations for existing customers, when stored systematically, are not in a pre-determined format. The physical locations may be in a format that is compliant with E911 specifications or the physical locations may be delineated by intersecting roads combined with topographical markers like trees, etc. There is generally no business need for a provider to geocode any location data. Moreover, address databases are usually built up over the life of the provider’s network, and during that time, much of the information has been typed into the database individually with varying levels of accuracy due to typing errors, street abbreviations, or changes in postal information such as zip code changes, and may vary by region. For purpose of reporting locations, stored address information may then be fed into a geocoder, which converts physical addresses into a geospatial coordinate. Due to spelling errors, typos, misunderstood city boundaries, and omission of parts of the address, the geocoders may have to take their best guess or estimate where a location falls on a map. Indeed, for very rural areas, the database often assigns a “surrogate” location.

\textsuperscript{7} Id. at 6340, para 34.  
\textsuperscript{8} Id.
Furthermore, where there are exceptions or errors in geolocations, they are difficult to resolve, requiring assumptions, a manual effort and an excruciating amount of time. Due to the inherent irregularities and limitations, routine geocoding of all serviceable addresses typically is not done in the regular course of business by all providers in the industry because the benefits to company operations are minimal when balanced against the cost and resources to do so. Price cap companies currently are addressing geocoding exceptions with the reporting of CAF Phase II locations. So while the proposal is a wonderful concept at the onset, recipients of CAF Phase II support have learned that managing locations through geocoders has as many challenges as managing locations through service addresses. There is no universal database of all locations across the country with associated geocoded coordinates, meaning carriers do not know where all homes and businesses are located. If the FCC desires carriers to report geocoded locational data in the FCC Form 477, the FCC may need to provide a database of all locations and the associated geocoded coordinates throughout the country so that each carrier can adopt and maintain this data for reporting accuracy and to eliminate disputes.

Similar challenges exist with requiring providers to report additional service capacity. By proposing that providers break down their data submission by the three categories referenced above, the Commission seems to desire “real time” customer level data for which providers can determine capacities and availability. However, this information is truly dynamic, in part, because it is usually handled manually when an existing or potential customer actually calls in to ask for service and/or upgrades. In such an event, a manual lookup is required to determine the equipment capacity and, in the case of copper loops, the distance from the relevant equipment. The proposal in the 477 NRPM would require a systemic change to make this data always available at the individual location level (essentially a global system of individual cable

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9 Id. at 6340, para 34.
lookups). This system would also have to change this data every time there was an upgrade to equipment. For many USTelecom carriers, this effort would be extremely costly and could not be done very quickly.

Additional challenges arise because within a census block there may be many serving devices and those devices may serve many census blocks. Logically, using the parent/child relationships between devices and service locations, providers currently have a good, although sometimes imprecise, understanding of their ability to serve a particular address. However, the fuzziness of geolocation data and the possible existence of multiple devices makes the systematic tracking of the data into the three proposed categories (existing customers served by a particular last-mile technology, potential customers that can be accommodated by the network, the areas where a provider is not capable of accommodating new customers, and areas where a carrier does not have existing customers, but new customers could be added within a standard interval upon request), almost impossible.

In the 477 NPRM, the Commission proposes to collect information by census block and distinguish whether providers have the capacity in place to make their service available and add new subscribers in a particular location and asks whether providers routinely maintain information about their service areas that would enable them to provide this information readily, or if it would require development of costly new information systems.\footnote{\textit{Id.} at 6340, para 35.} USTelecom members often have information about their capacity to add new subscribers in their systems; however, frequently, it is held in multiple data sets and requires manual searching to determine customer eligibility. To extract this data for reporting purposes would require system development to collect, and analyze millions of records, balancing different indicia of availability and create a standardized report. The effort to reprogram systems to “look up” this sort of information and
format in a way that would be useful to others would be a cost-prohibitive and extremely burdensome effort. For example, a provider might have as many as 30 million locations in its territory, but in actuality the provider only serves 6 million customers. Currently, the availability of service is determined at the time of an individual sale, and it is not possible to accurately make availability determinations all at once “en masse.” When attempting to track availability, this data is dynamic. Given the lag in extracting data, geocoding the locations and reporting data for every location across the country, the data would be stale by the time of reporting and, in USTelecom’s view, of limited value. Likewise, with respect to exhaust reports – i.e., whether relevant equipment has sufficient capacity to accommodate new customers – those reports can be provided for densely populated areas as a snapshot at a point in time for parts of a service territory, but not extensively throughout the provider’s entire area. In fact, usually exhaust reports are not even generated for smaller rural study areas because those providers are managing their ordering and engineering through manual processes. For some providers, inquiries are captured through the ordering process that generates an e-mail to the engineering team to alert them of demand in areas where exhaust is a threat. These providers do not maintain systematic data collections of exhaust today due to the lack of a business need. If carriers are required to maintain such reports, at a minimum, they will have to hire additional engineering resources just to create FCC reports.

As a result, the proposal to require deployment data be broken down into current deployment, possible future areas and areas where a provider is unable to offer service to additional customers would require the creation of entirely new systems capable of producing dynamic real-time information solely for FCC reporting purposes, and the programming costs

\[\text{Id.} \]
would be large, particularly for small rural carriers that can’t even afford to do geocoding currently.

Additionally, the Commission asks whether giving fixed broadband providers the option of reporting their deployment data by filing geospatial data showing polygons of coverage instead of reporting a list of census blocks would be possible based on how fixed broadband providers currently store their broadband footprints and, if not, how should the Commission specify a single methodology for determining the coverage area of a network.\(^{12}\) For some smaller USTelecom members, this sort of filing is not a difficult programming effort; however, larger providers argue that past experience with the National Broadband Map (NBM) demonstrates that providing geospatial coverage offers no greater value than reporting tabularly at a census block level. Moreover, in the experience of USTelecom members, showing coverage on a map has caused disputes among providers due to over- or understatements of broadband coverage. In reality, the process to prepare such coverage maps requires substantial computer resources and would only perpetuate the illusion of accuracy. Ultimately, experience has shown that it is much better to work off a standard unit, such as census block boundaries, to estimate coverage and availability. In requesting that carriers provide shapefiles or raster files, the Commission essentially would be recreating the NBM program and effectively making it mandatory rather than voluntary.

Yet another proposal that involves additional granularity in data collection, is the Commission’s proposal that it collect broadband availability data at a sub-census-block level, including by street address.\(^{13}\) USTelecom members oppose such a requirement. Not only would such an approach be overly burdensome, time-consuming, and expensive for providers, it would generate a volume of data so large that the Commission would likely have to create an entirely

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\(^{12}\) Id. at 6341, para 38.

\(^{13}\) Id. at 6342, para 39.
new platform to receive it. In fact, in a footnote in the 477 NPRM, the Commission acknowledges that the number of records that would be reported would increase 10 times, from 70 million to over 750 million.\textsuperscript{14} Furthermore, getting accurate addresses, particularly in rural areas, is notoriously difficult and addresses are often incomplete or just wrong. Similarly, the Commission also proposes to collect data about on street segment coverage – potentially in lieu of address-level collections and obviating the need for geocoding.\textsuperscript{15} Generally, USTelecom members are opposed to a requirement that carriers provide sub-census block determinations because adding this capability would be costly. Many providers do not currently use street segment data, to add it to providers’ systems would be difficult. Nevertheless, sub-census block information could be useful for census blocks that have an area greater than 2 square miles. Similar to the NBM approach, for these larger area census blocks, the Commission could permit carriers to voluntarily report street segments or best-efforts addresses that they serve in these census blocks at the carrier’s election. This would enable the Commission to obtain more specific information on providers’ coverage in larger census blocks – where providing service to some could still leave a significant geographic area within the census block that is not served by the provider – without unnecessarily burdening carriers with a mandated sub-census block reporting requirement for all census blocks. We note, however, that providers would need flexibility to define these areas and that there would never be uniformity.

As a separate alternative, the Commission seeks comment on whether it should require providers to geocode all the addresses at which service is available and whether the Commission should specify a single geocoding methodology to be used by all providers. This proposal would require all providers to use a single geocoding service, and specify how to handle any geocoding

\textsuperscript{14} \textit{Id.} at fn 63.
\textsuperscript{15} \textit{Id.} at 6343, para 41.
USTelecom members oppose this alternative because there is essentially no geocoding standard, and because external geocoders can be inaccurate, very slow, expensive, and not transparent, as proven through the data gathering for reporting requirements specified for CAF Phase I and CAF Phase II support recipients. Providers, particularly small rural ones, do not have the resources to geolocate every device and serviceable location on its network, and such data is not currently maintained in the ordinary course of business. For example, for just one of USTelecom’s larger member companies, this would entail examining nearly 30 million locations. In part because this is such a huge undertaking, neither the U.S. Postal Service nor the U.S. Census Bureau or even the nation’s 911 dispatchers have such a database. Internet giants such as Google, Apple (TomTom) and Microsoft have been working for years to build such a database, but as yet it does not exist with complete accuracy. As reported by the US Census, there are currently only 93 million geocoded addresses commercially available which is only 80% of the addresses available in the 2000 census. If the Commission’s estimate of 750 million locations is an accurate one, then only approximately 12% of all the locations nationwide have verified geocoded addresses. Simply put, we aren’t there yet. Any change to the existing 477 reporting requirements does not enhance the data but skews it.

Additionally, there is a great expense to taking measurements in the field; it requires not only time on the ground, but the input of that data as well as system integration (i.e., field data to

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16 477 NPRM at 6342, para 40.
18 See, United States Census 2000, The Handbook For A Better Census: Opportunities for Governor’s Liaisons at 24, available at https://books.googleusercontent.com/books/content?req=AKW5QadkzdpSozi82tAmmvX_Hz3OwkJ6PHKvQ4rgGEJskJ3E5COCGkMA9bRwbdOrn3QzkdQROjZNNWXVYJjqBhDneiGRdGvGVc5IP4fjGUwno6x5y7b7S7BU25v2m_oYNU4RDUXCpq7IpCp7rzWxkJKbC5EnkscM UbpeUeqPI7Q8hYaQ7XSvdLJd9n3RzDensEeLeisl9uMFyZp6LAdJZBerFrbkQ3O_yjWDFJvplMaxC22mr_Jcs1PINT5VuYVD-wLX150CAWvWqX4V0IHl4C6dwNng
mapping data to customer/account data). USTelecom members would be strongly opposed to such a requirement. Anecdotally, the USAC portal currently requires 6 decimal digits of accuracy for CAF Phase II location reporting, which is the beyond the capability of consumer GPS measurements (4 digits) and commercial survey equipment (5 digits). Furthermore, as noted earlier, geocoding and field measurements perpetuate only the illusion of accuracy. These methods will not consistently provide the precise information the Commission may be anticipating. In turn, the usefulness of such granular reporting to the Commission or the public may be limited and thus not warranted.

The Commission also asks if fixed broadband providers should have to identify census blocks that they can fully serve and whether or not they know if any locations within each block are beyond the reach of their facilities, such that they could not make service available within a typical service interval, and whether such data would be useful to the Commission and the public. This proposal is problematic because census blocks often span multiple providers’ service areas and providers have no visibility into the portion outside of their own service areas. Furthermore, even if a census block is entirely within a provider’s service area, if the provider is not already providing service throughout the census block, it is onerous for a provider to determine whether it could serve the unserved areas within a typical service interval. As a result, it seems this sort of sub-block coverage estimate is overly burdensome and would not add value to the data the Commission already collects and is fraught with the same issues previously described.

20 477 NPRM at 6343-44, para 43.
II. Collection of Business/Enterprise/Government Data

Another proposal in the 477 NPRM is to eliminate the requirement that providers separately report available contractual or guaranteed data throughput rates for business/enterprise/government services (BDS), while maintaining separate indicators for mass market/consumer service and/or BDS deployment.\textsuperscript{21} The Commission’s proposal is based upon its experience that the information collected for mass market data already provides the necessary bandwidth data in each of these cases and that the added BDS data does not appear to provide additional useful insight.\textsuperscript{22} USTelecom is in favor of eliminating the separate reporting of available contractual or guaranteed data throughput rates (aka committed information rate or CIR) for BDS because in most instances, USTelecom members’ “best efforts” rates are the same for residential and business mass market deployment, in part because higher speeds involves special construction. Furthermore, for most USTelecom members, the broadband services not considered mass market are not currently required to be reported on the deployment section of the FCC Form 477 because those services are not able to be provisioned in a customary timeframe. The Commission inquires whether some carriers may be reporting CIR data incorrectly in some cases and whether this proposal may be a solution to that problem.\textsuperscript{23} USTelecom believes it may be more accurate to simply report whether a provider offers BDS, but no longer require that it report any speed data.

III. National Level Fixed Broadband Subscriber Counts by Speed and Disaggregated Subscriber Data is Sensitive Information

USTelecom opposes efforts to make public broadband subscriber data, even aggregated at the national level. As noted in the 477 NPRM, the Commission historically has not made filer-

\textsuperscript{21} Id. at 6338-39, para 31.
\textsuperscript{22} Id.
\textsuperscript{23} Id. at 6339, para 32.
specific broadband subscription data collected on FCC Form 477 routinely available to the public, and has redacted and aggregated data as necessary to prevent disclosure of proprietary data. Now the Commission suggests that some of the benefits derived from public disclosure may outweigh any confidentiality interests for some aggregated data such as the number of subscribers at each reported speed on a national level. USTelecom disagrees. As the Commission acknowledges, even with aggregated data, it may be possible to infer with reasonable certainty to whom the data belongs to because of a limited subset of providers that offer particular services. Thus, even if the numbers were aggregated to the national level, USTelecom would be opposed to releasing fixed broadband subscriber counts by speed because it would allow competitors to infer, to some degree, the nature of a provider’s competitive footprint and details about customer adoption of different competitive offerings. The Commission’s reasoning that the disclosure is akin to the broadband subscribership counts released by agencies such as the Securities Exchange Commission is a false equivalency because those numbers are only communicated in total, not individually by speed. The difference from a competitive standpoint is significant.

Moreover, the competitive landscape has changed with the implementation of the BDS order, which detariffed certain business data services deemed competitive by the Commission. Although the FCC Form 477 collects data only relating to circuits that go to the Internet, the same facilities may be utilized to implement business data services. As such, broadband deployment and subscriber information can be very sensitive. A database that outlines where certain technology exists for broadband, speed information and a carrier’s subscriber/deployment base grossly disadvantages the carrier in the market who has incurred the expense to gather this

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24 Id. at 6347, para 53.  
25 Id.  
26 Id.
data. A publically available Form 477 database that provides data outlining where certain
technology exists for broadband, speed information and a carrier’s subscriber/deployment base
grossly disadvantages the carrier in a competitive market who has incurred the expense to gather
this data.

USTelecom is also opposed to the Commission’s proposal that certain types of
disaggregated subscriber data should be made public after a certain period of time has passed.
The Commission mistakenly believes that the passage of time lessens the potential for
competitive harm from the release of filer-specific subscription data. USTelecom believes that
regardless of how much time has passed, disclosure of historical competitive information would
competitively disadvantage its members as well as compromise their future business plans.
Subscriber data snapshots at given points in time do not become irrelevant with the passage of
time. Instead, they are stories over time about the impact of competitive offerings and sales,
which if disclosed, could harm a provider’s unique competitive position.

More generally, the Commission also seeks input on how it makes the FCC Form 477
data available to the public and stakeholders, as well as what approach the Commission should
take with regard to the NBM program and other maps it makes available via download in
conjunction with the FCC Form 477 data. Specifically, the Commission asks if a searchable
national map of the most recently available FCC Form 477 broadband deployment data would be
of significant value for the public, industry, researchers and others. USTelecom would be
opposed to providing public coverage data below the census block level because in requiring an
added level of granularity, as previously noted herein, the accuracy of the data becomes an
exponentially less reliable. It would be a mistake to expose data that is potentially fraught with

27 Id. at para 54.
28 Id. at 6348-49, para 58.
29 Id.
inaccuracy. As mentioned previously herein, providing data below the census block level would only lead to constant disputes regarding the availability of service due to the misplacement of geospatial points. The potential for disputes would ultimately make such a map unusable. Furthermore, much like the NBM, the cost of such a map would be in the millions. An expensive map, if not usable, would be a waste of money.

IV. Annual Filing for FCC Form 477 Is Preferable

The FCC Form 477 is currently a semiannual collection with data as of June 30 and December 31 of each year reported in March and September each year. USTelecom supports making the Form 477 an annual filing. Such a move would reduce burdens on service providers significantly, and the utility of the data would not be hampered significantly because even on a one-year cycle, the Commission will continue to have the data it needs to meet its statutory and policy making obligations, and staff will have additional time to focus on the processing and release of reports and data. In addition, the resulting impact on the availability of current data would be minimal, because the Commission routinely releases reports that are based on FCC Form 477 data collection eight to twelve months after the effective date of data collected. For example, the Commission typically releases the Internet Access Services Reports30 10 to 12 months after the effective date of data collected and releases the Fixed Broadband Deployment Report31 approximately 8 to 9 months after the effective date of data collected. In effect, data currently released is already stale to some degree. Moving to a 12-month reporting cycle will reduce the frequency of the stale data but not the degree of the staleness. USTelecom believes that the greater frequency of stale data does not justify the additional man hours necessary to retain a semi-annual reporting cycle.

30 See https://www.fcc.gov/internet-access-services-reports
31 See https://www.fcc.gov/general/broadband-deployment-data-fcc-form-477
V. Conclusion

For the reasons discussed herein, as the Commission considers various proposals to modernize the FCC Form 477, it should tread carefully and not adopt requirements that would result in minimal additional benefits while placing onerous, prescriptive requirements on providers. USTelecom and its members whole-heartedly support the Commission’s initiative to ensure that the best available data is being collected, but USTelecom asks the Commission to carefully consider the issues addressed herein so new rules do not become the source of unnecessary and burdensome regulations.

Respectfully submitted,

USTELECOM ASSOCIATION

By: B. Lynn Follansbee
    Jonathan Banks

Its Attorneys
601 New Jersey Avenue, NW, Suite 600
Washington, D.C. 20001
202-326-7300

October 10, 2017